

The invention claimed is:

- 1 1. A method of detecting and identifying a received signal, comprising the steps of:
 - 2 segmenting the received signal into at least a first and a second segment, each having at least two symbols;
 - 4 correlating each of the symbols in the at least first and second segments with a representative symbol to produce at least a first and a second set of symbol correlation outputs;
 - 6 producing at least a first and a second set of signal identity outputs, the first set of signal identity outputs indicating a degree of match between a first signal represented by the first set of symbol correlation outputs and each of a plurality of expected signal identities, and the second set of signal identity outputs indicating a degree of match between a second signal represented by the second set of symbol correlation outputs and each of the plurality of expected signal identities;
 - 11 providing frequency offset compensation to at least the first and second set of signal identity outputs to produce at least a first and second set of frequency offset compensated signal identity outputs;
 - 14 summing corresponding signal identity outputs from the at least first and second sets of frequency offset compensated signal identity outputs to form a plurality of summed signal identity outputs; and
 - 17 comparing at least one summed signal identity output to a threshold to detect and identify the received signal.
- 1 2. The method of claim 1, further comprising the step of deinterleaving at least one of the segments to form the at least two symbols.
- 1 3. The method of claim 1, wherein the representative symbol is the same for at least two symbols.
- 1 4. The method of claim 1, wherein the threshold is the same for each summed signal identity output.
- 1 5. A method of detecting and identifying a received signal, comprising the steps of:
 - 2 segmenting the received signal into at least a first and a second segment, each having at least two symbols;

4 correlating each of the symbols in the at least first and second segments with a
5 representative symbol to produce at least a first and a second set of symbol correlation outputs;
6 producing at least a first and a second set of signal identity outputs, the first set of signal
7 identity outputs indicating a degree of match between a first signal represented by the first set of
8 symbol correlation outputs and each of a plurality of expected signal identities, and the second set
9 of signal identity outputs indicating a degree of match between a second signal represented by the
10 second set of symbol correlation outputs and each of the plurality of expected signal identities;
11 providing a first frequency offset compensation to at least the first and second set of
12 signal identity outputs to produce at least a first and second set of first frequency offset
13 compensated signal identity outputs;
14 providing a second frequency offset compensation to at least the first and second set of
15 signal identity outputs to produce at least a first and second set of second frequency offset
16 compensated signal identity outputs;
17 summing corresponding signal identity outputs from the at least first and second sets of
18 first frequency offset compensated signal identity outputs to form a first plurality of summed
19 signal identity outputs;
20 summing corresponding signal identity outputs from the at least first and second sets of
21 second frequency offset compensated signal identity outputs to form a second plurality of
22 summed signal identity outputs;
23 comparing at least one summed signal identity output from the first and second plurality
24 of summed signal identity outputs to a threshold to produce a set of threshold exceeding signal
25 identity outputs; and
26 selecting at least one threshold exceeding signal identity output based on magnitude to
27 detect and identify the received signal.